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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/438,184	11/11/1999	RON MCCABE	1735.2.2	8995

23484 7590 01/02/2003

JOHN W L OGILVIE  
COMPUTER LAW  
1211 EAST YALE AVE  
SALT LAKE CITY, UT 84105

EXAMINER

DINH, DUNG C

ART UNIT	PAPER NUMBER
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2153

DATE MAILED: 01/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n No.

09/438,184

Applicant(s)

MCCABE ET AL.

Examiner

Dung Dinh

Art Unit

2153

-- The MAILING DATE of this communication appears n the c ver sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-88,101,103,104,106,108 and 109 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-88,101,103,104,106,108 and 109 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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#### DETAILED ACTION

Applicant's arguments filed 10/28/2002 have been fully considered but they are not persuasive.

Applicant argued that there is no suggestion to combine the references. The argument is not persuasive because the FrameRunner reference is a storage product advertisement that listed the desirable characteristics of the product. Hence, the desire or motivation to have any of the characteristics listed is implicit by the nature of the reference. As per the Ohran reference, the motivation is explicitly provided by the reference - col.11 lines 10-14 - to make the remote storage appears as a local device (i.e. to provide transparency).

Applicant argued that the rejection did not addresses all limitations of the claims - specifically claims 1, 27 46, 101/102.

Regarding claim 1, the claim recites the system comprises at least two characteristics from the recited list. Hence, the reference needs only teach at least two of the characteristics - not all of the characteristics recited.

Regarding claim 27, the claim does not recite any specific limitation further defining the function of the "spoof packet". The claim merely recites the local mirroring units having a spoof packet generator. Since the combination of the references

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in the rejection is a mirror storage system over a TCP/IP network, it is inherent that it has packet generator related to the mirroring process (including any spoof packet required) and nonvolatile memory (e.g. disk drive) to store the mirror data received.

Regarding claim 101, the steps are apparent in the mirror process as state in the rejection below.

***Claims Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 76-88 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

The term "flexible mirroring characteristic" in claims 76-80 is a relative term which renders the claim indefinite. The term "flexible mirroring characteristic" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite meaning of the term, and one of ordinary skill in the art would not be reasonably apprised of

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the scope of the invention. It is unclear what characteristic would constitute as a "flexible mirroring characteristic."

Claims 80-88 are rejected because they are dependent upon rejected claim 76.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

*(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.*

Claims 1-75, 101, 103, 104, 106, 108, and 109, are rejected under 35 U.S.C. 103(a) as being unpatentable over Double-Take "Meeting the new Requirements for Enterprise Data Protection", further in view of FrameRunner and Orphan et al. US patent 5,812,748.

As per claims 1-26, Double-Take discloses improving data mirroring with non-invasive (page 7 "Compatible - invisible to user and to applications"), TCP journey line (page 9 "wide area connections", it is apparent that the wide area network uses TCP/IP), multiplicity in which the system provides many-to-one and

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one-to-many mirroring (see page 13). Double-Take does not specifically disclose serverless characteristic and disk emulation.

FrameRunner teaches improving data mirroring with serverless destination (page 2 "No Host Intervention") so as to provide flexible connection to any system with minimal impact to the system performance.

Ohran et al. teaches improving data mirroring with disk emulation by which data is mirrored through standard storage subsystem bus (col.10 line 65 to col.11 line 14) to enable transparent disk mirroring.

It would have been obvious for one of ordinary skill in the art to use any combinations of the characteristics above because they would all improved the data mirroring system.

Claims 11-13, it is well known in the art to use SCSI, fibre channel, and USB for storage subsystem (see applicant admitted prior art on p.9, and US patent 6,386,683 col.3 line 61+). The type of bus used would clearly have been a matter of design choice.

Claims 20, Double-Take teaches (on page 8) a local server linked to a local mirroring unit, which is lined by a journey link (offsite link) to a remote mirroring unit (offsite).

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As per claim 27, Double-Take teaches a mirroring system essentially as claimed having at least two primary servers (page 8 - Production servers) connected to a local mirroring unit (High Availability server), and a remote mirroring unit connected to the local mirroring unit via a journey link (offsite link).

Double-take does not disclose using disk emulator for mirroring data between the primary server and the local mirroring unit and serverless mirroring unit. Ohran et al. teaches disk mirroring by using mass storage emulator [col.10 line 65 to col. 11 line 15]. FrameRunner teaches improving data mirroring with serverless destination (page 2 - "No Host Intervention") so as to provide flexible connection to any system with minimal impact to the system performance. It would have been obvious for one of ordinary skill in the art to combine Ohran and FrameRunner with Double-take because it would have enabled efficient and transparent disk mirroring.

As per claim 101, it is rejected under similar rationale as for claim 27 above. Since the system as modified provide disk storage emulation to provide the appearance of a local storage device to the host computer, it is apparent that the host would transfer data as via storage system bus as if the device is a local storage device. Since the actual storage is located in a remote serverless mirroring unit over the TCP/IP journey link, it

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is apparent that the emulator (e.g. local mirroring unit) would transmit data as packets over the TCP/IP link to the remote serverless mirroring unit.

As per claims 28-45, and 102-109, the limitations recited would have been readily apparent to one of ordinary skill in implementing the system as modified.

As per claims 46-75, they are rejected under similar rationale as for claims 27-45 above. Double-take discloses mirroring over low bandwidth journey line (page 9 Tolerant - "...wide area network are slower").

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung Dinh whose telephone number is (703) 305-9655. The examiner can normally be reached on Monday-Thursday from 7:00 AM - 4:30 PM. The examiner can also be reached on alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached at (703) 305-4792.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group 2100 Customer Service whose telephone number is (703) 306-5631.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, DC 20231

**or faxed to:**

(703) 746-7239, (for formal communications intended for entry)  
(703) 746-7240 (for informal or draft communications, please



Application/Control Number: 09/438,184

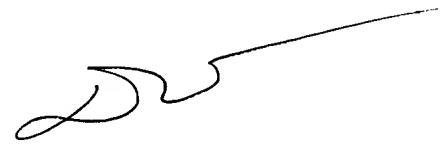
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label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II,  
2121 Crystal Drive, Arlington. VA, Fourth Floor (Receptionist).

Dung Dinh  
Primary Examiner  
December 28, 2002

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke extending to the right.

Dung C. Dinh  
Primary Examiner